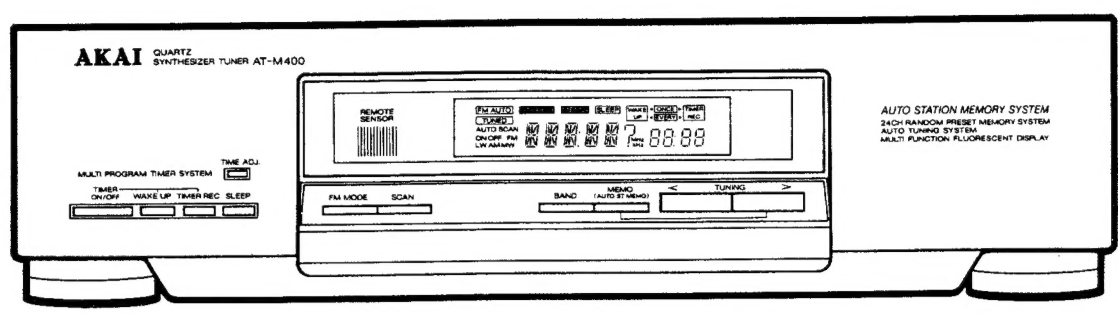
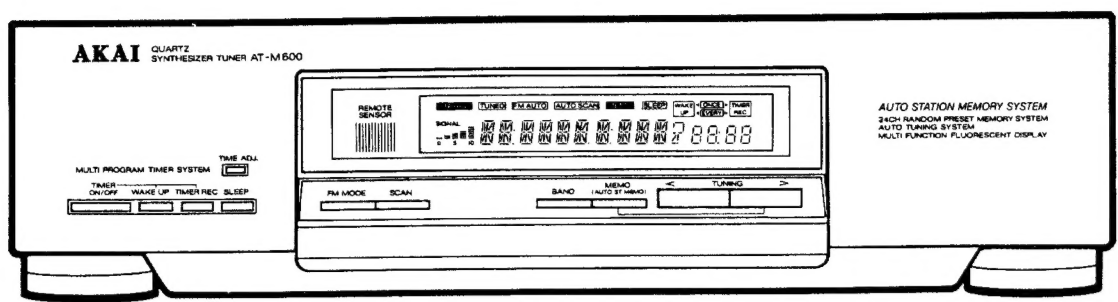


AT-M400/L
AT-M600/L

AKAI SERVICE MANUAL



MODEL AT-M 400



MODEL AT-M 600

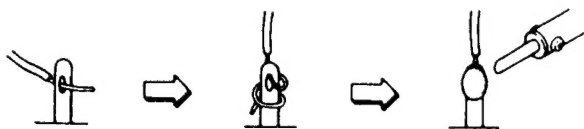
QUARTZ SYNTHESIZER TUNER

MODEL **AT-M400/L**
MODEL **AT-M600/L**

★ SAFETY INSTRUCTIONS

PRECAUTIONS DURING SERVICING

1. Parts identified by the ⚠ (*) symbol are critical for safety. Replace only with parts number specified.
2. In addition to safety, other parts and assemblies are specified for conformance with such regulations as those applying to spurious radiation. These must also be replaced only with specified replacements.
Examples: RF converters, tuner units, antenna selector switches, RF cables, noise blocking capacitors, noise blocking filters, etc.
3. Use specified internal wiring. Note especially:
 - 1) Wires covered with PVC tubing
 - 2) Double insulated wires
 - 3) High voltage leads
4. Use specified insulating materials for hazardous live parts. Note especially:
 - 1) Insulation Tape
 - 2) PVC tubing
 - 3) Spacers (Insulating Barriers)
 - 4) Insulation sheets for transistors
 - 5) Plastic screws for fixing microswitch (especially in turntable)
5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.), wrap ends of wires securely about the terminals before soldering.



6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.).

7. Check that replaced wires do not contact sharp edged or pointed parts.
8. Also check areas surrounding repaired locations.
9. Use care that foreign objects (screws, solder droplets, etc.) do not remain inside the set.

MAKE YOUR CONTRIBUTION TO PROTECT THE ENVIRONMENT

Used batteries with the ISO symbol for recycling as well as small accumulators (rechargeable batteries), mini-batteries (cells) and starter batteries should not be thrown into the garbage can.



Please leave them at an appropriate depot. All other household batteries can be thrown out with the household waste.

★ INFORMATION

SYMBOLS FOR PRIMARY DESTINATION

Alphabet indicates the destination of the units as listed below.

Symbols	Principal Destinations
B	UK
E	Europe (except UK)
S	Australia
V	W. Germany only
U	Universal Area
Y*	Custom version

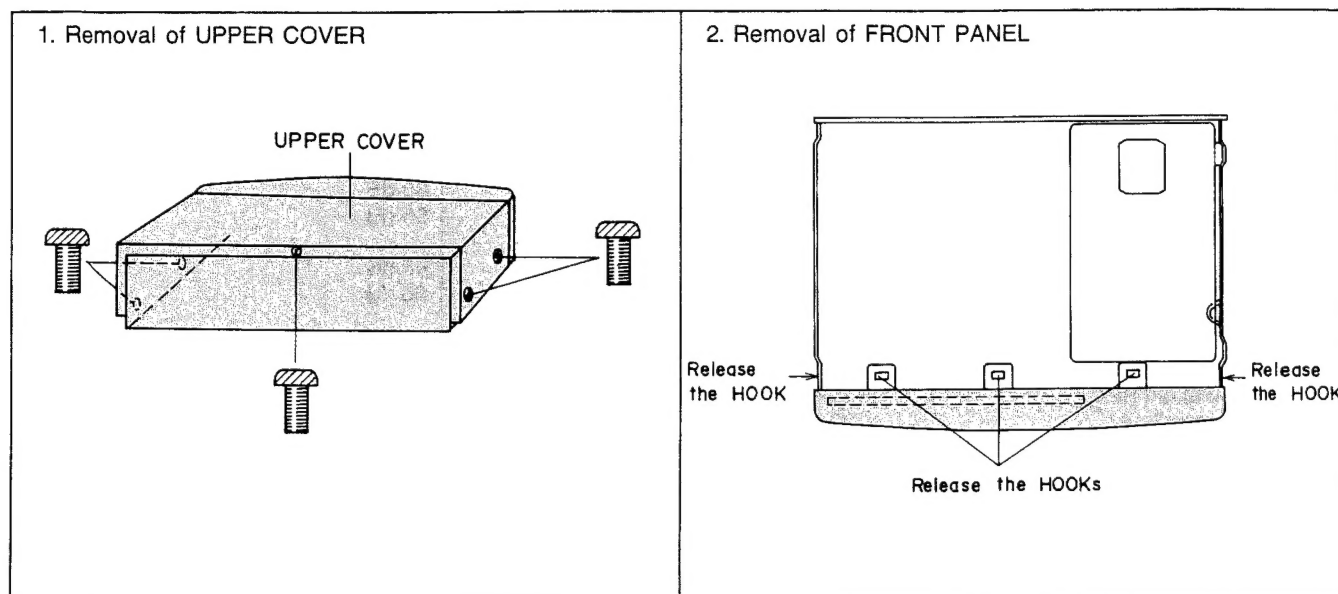
★ SPECIFICATIONS

FM TUNER SECTION	Except <input type="checkbox"/> model	<input type="checkbox"/> model only
Tuning frequency range	87.5 MHz to 108 MHz	87.5 MHz to 108 MHz
Useable sensitivity	13.2 dBf	18.2 dBf
Quieting sensitivity		
MONO	21.2 dBf	30.2 dBf
STEREO	42.2 dBf	51.2 DBf
Capture ratio	2.0 dB	2.0 dB
Selectivity	60 dB	70 dB
Image rejection	45 dB	70 dB
IF rejection	80 dB	90 dB
Spurious rejection	80 dB	80 dB
AM suppression	55 dB	55 dB
S/N(IHF)		
MONO	70 dB	65 dB
STEREO	65 dB	60 dB
T.H.D		
MONO	0.2 %	0.3 %
STEREO	0.7 %	0.7 %
Stereo separation(1kHz)	40 dB	40 dB
Frequency response	30 Hz to 15 kHz \pm 1.0 dB	30 Hz to 15 kHz \pm 1.0 dB
Output level	770 mV (100% Mod.)	650 mV (100 % Mod.)
AM TUNER SECTION	Except <input type="checkbox"/> model	<input type="checkbox"/> model only
Tuning frequency range		
10 kHz step	530 kHz to 1,610 kHz	530 kHz to 1,610 kHz
10 kHz step (<input type="checkbox"/> only)	530 kHz to 1,700 kHz	
9 kHz step	531 kHz to 1,602 kHz	
Useable sensitivity	400 μ V/m	400 μ V/m
Selectivity	25 dB	25 dB
Image rejection	35 dB	35 dB
IF rejection	35 dB	35 dB
S/N ratio	40 dB	40 dB
Output level (30 % Mod.)	250 mV	250 mV
LW SECTION	AT-M400L/M600L only	
Tuning frequency range	144 kHz to 351 kHz	
Useable sensitivity	800 μ V/m	
Selectivity	25 dB	
Image rejection	30 dB	
IF rejection	35 dB	
S/N ratio	30 dB	
TIMER SECTION		
Timer base	Quartz oscillator	
Timer display	24 hour notation	
Timer system	Daily type (TIMER REC / WAKE-UP / SLEEP)	
Timer set period	1 minute to 23 hours and 59 minutes	
GENERAL		
Power requirements	Supplied from amplifier	
Dimensions	360 (W) \times 95 (H) \times 315 (D) mm	
Weight	1.9 kg	
STANDARD ACCESSORIES		
FM antenna	\times 1	
Plug adapter	\times 1	
AM loop antenna	\times 1	

* For improvement purposes, specifications and design are subject to change without notice.

I. DISASSEMBLY

In case of trouble, etc., necessitating dismantling, please dismantle in the order shown in the illustrations.
Reassemble in reverse order.



II. PRINCIPAL PARTS LOCATION

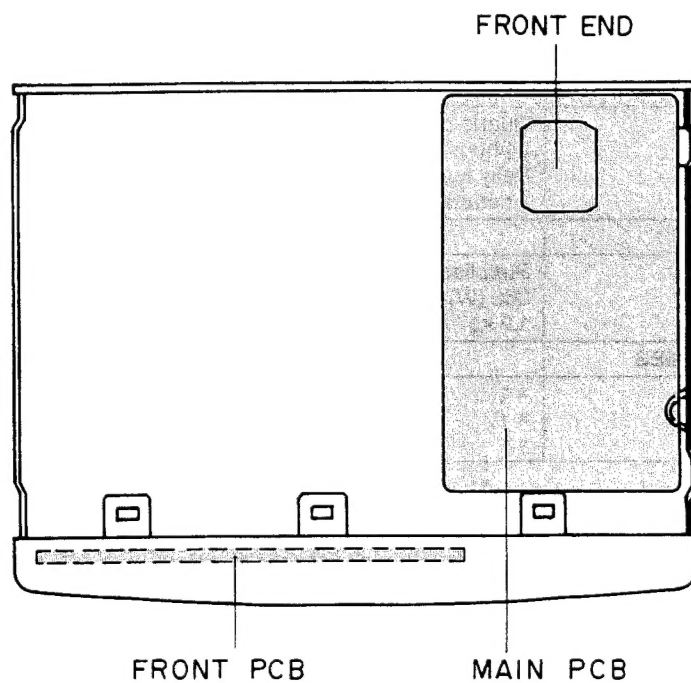


Fig. 2-1 Top view

III. ADJUSTMENT

3-1. INSTRUMENT CONNECTIONS

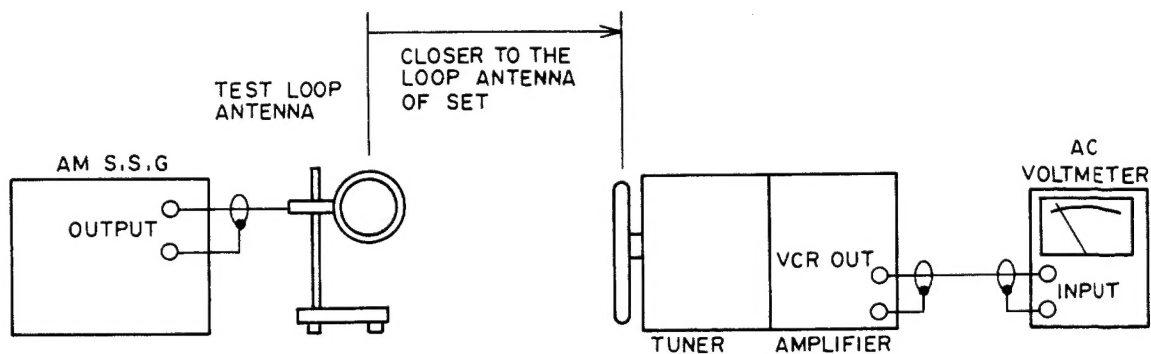


Fig. 3-1 Instrument connection for AM (MW, LW) section adjustment

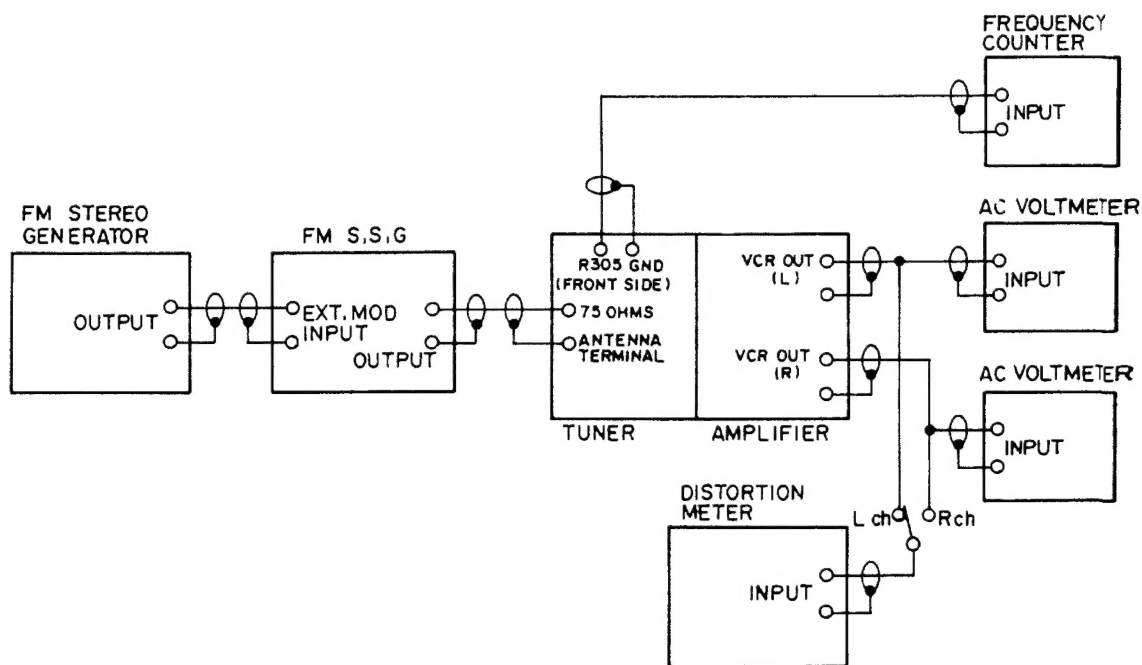


Fig. 3-2 Instrument connection for FM section adjustment

3-2. HOW TO CALL THE PRESET FREQUENCY FOR THE ADJUSTMENT

Press the RESET button on the rear panel. The internal frequency preset memory is set as shown blow.

[E B models]

	CH 1	CH 2	CH 3	CH 4	CH 5	CH 6
BAND FREQ. ST/MONO	FM 87.5 MHz MONO	FM 88.0 MHz MONO	FM 98.0 MHz FM AUTO	FM 106.0 MHz MONO	FM 108.0 MHz MONO	MW 531 kHz MONO

	CH 7	CH 8	CH 9	CH 10	CH 11	CH 12
BAND FREQ. ST/MONO	MW 603 kHz MONO	MW 999 kHz MONO	MW 1404 kHz MONO	LW 1602 kHz MONO	LW 162 kHz MONO	LW 198 kHz MONO

	CH 13	CH 14	CH 15-24
BAND FREQ. ST/MONO	LW 297 kHz MONO	LW 351 kHz MONO	FM 87.5 kHz MONO

[U V models]

	CH 1	CH 2	CH 3	CH 4	CH 5	CH 6
BAND FREQ. ST/MONO	FM 87.5 MHz MONO	FM 88.0 MHz MONO	FM 98.0 MHz FM AUTO	FM 106.0 MHz MONO	FM 108.0 MHz MONO	AM 531 kHz MONO

	CH 7	CH 8	CH 9	CH 10	CH 11-24
BAND FREQ. ST/MONO	AM 603 kHz MONO	AM 999 kHz MONO	AM 1404 kHz MONO	AM 1602 kHz MONO	FM 87.5 MHz MONO

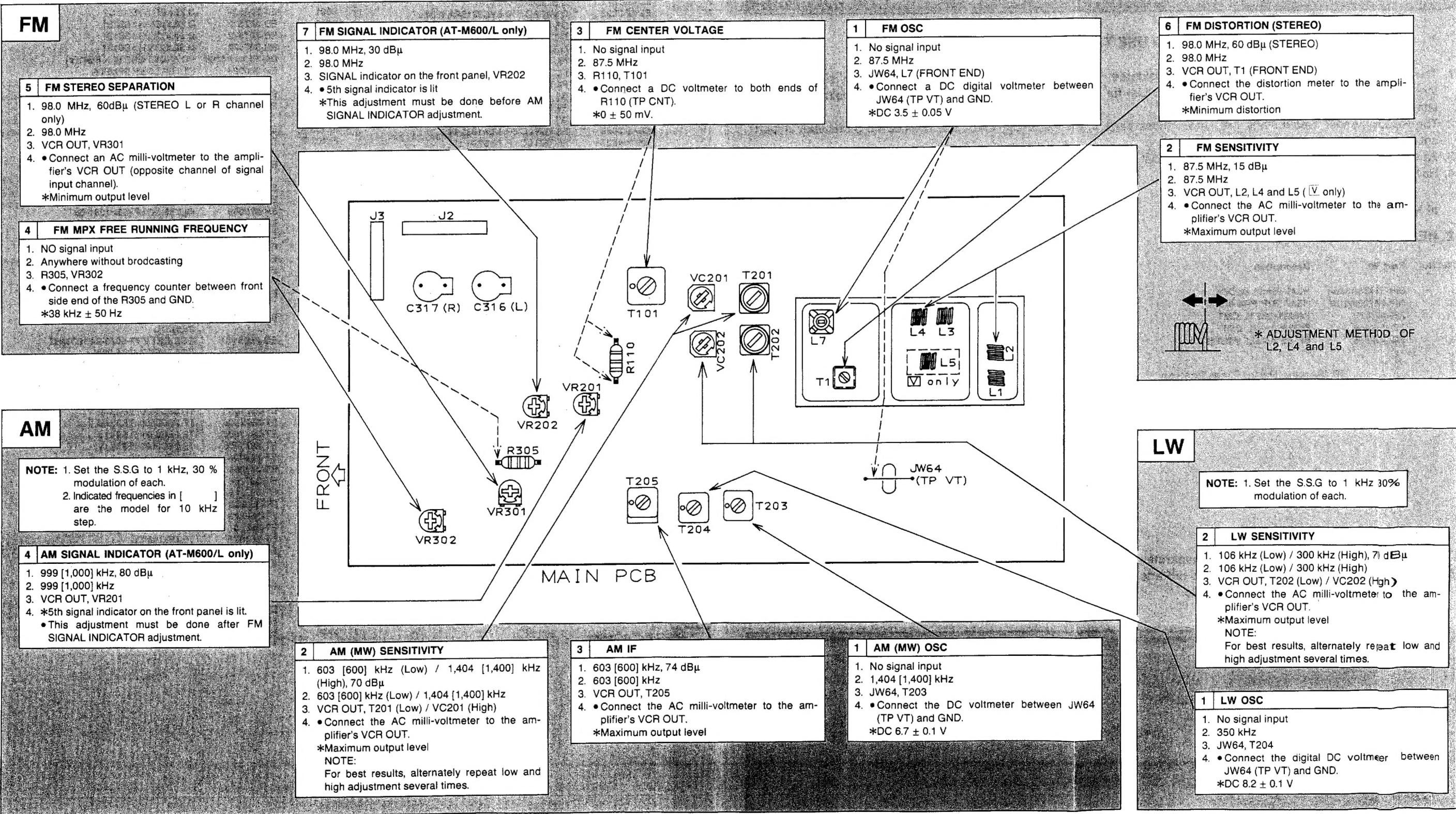
3-3. ADJUSTMENT

NOTE: Set the SSG to 1 kHz, 75 kHz deviation for **U**, **S**, **B** and **E** model, 40 kHz deviation for **V** model.

STEP	ADJUSTMENT ITEM
1.	SSG frequency, output level
2.	Tuning frequency
3.	Test point, Adjustment part
4.	Remarks (•), result (*)

Adjustment Part

Test Point



VI. PARTS LIST

ATTENTION

1. When placing an order for parts, be sure to list Part No., Model No. and the description of eachpart. Otherwise, the non-delivery of the part or the delivery of a wrong part may result.
2. Please make sure that Part No. is correct when ordering. If not, a part different from the one you ordered may be delivered.
3. Since the parts shown in Parts List of Preliminary Service Manual may have been the subject of changes, please use this Parts List for all future reference.

HOW TO USE THIS PARTS LIST

1. This Parts List lists those parts which are considered necessary for repairs. Other common parts, such as resistors and capacitors, are listed in the "Common List for Service Parts" from which these parts should be selected and stocked.
2. The Recommended Spare Parts List shows those parts in the Parts List which are considered particularly important for service.
3. Parts not shown in the Parts List and "Common List for Service Parts" will not in principle be supplied.
4. How to read the Parts List.

a) Mechanism Block

2. HEAD BASE BLOCK

Ref.No.	Part No.	Description
1	BH-T2023A320A	HEAD BASE BLOCK
2	HP-H2206A010A	HEAD R/P PR4-8FU C
3	ZS-477876	PAN20×03STL CMT
4	ZS-536488	BID20×08STL CMT
5	ZG-402895	SP CS ANGLE ADJUST

SP (Service Parts) Classification
This number corresponds with the individual parts index number in that figure.

b) PC Board

6. MAIN PC BOARD

Ref.No.	Part No.	Description
IC1	EI-324536	IC HD14049BP
IC2	EI-336801	IC MB8841-564M
C1A	EC-338399	C MMY V 223M 250AC [U,E,B,S]
C1B	EC-350949	C MMY V 223M 250DC [J]
C1C	EC-338397	C MMY V 223M 125AC [C,A]
X1	EI-318384	OSC X'TAL NC-18C

Symbols for primary destination
[A] : AAL (U.S.A) [S] : SAA (Australia)
[B] : BEAB (England) [U] : U/T (Universa Area)
[C] : CSA (Canada)
[E] : CEE (Europe) [V] : VDE (W. Germany)
[J] : JPN (Janan) [Y] : Custom Version

SP (Service Parts) Classification
These reference symbols correspond with component symbols in the Schematic Diagrams.

The available PC Board Blocks are listed separately.

5. When Part No. is known, Parts Index at end of Parts List can be used to locate where that part is shown in Parts List by its Reference No. listed at right of Part No.

WARNING

△ (*) INDICATES SAFETY CRITICAL COMPONENTS. FOR CONTINUED SAFETY, REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURE'S RECOMMENDED PARTS.

AVERTISSEMENT

△ (*) IL INDIQUE LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

1.RECOMMENDED SPARE PARTS

We suggest you to stock the following Recommended Spare Part items listed below since they can cover most of the routine service.

Ref.No.	Part No.	Description
1	BA-F0141A010B	PC FRONT END BLK FE41(V)
2	ED-307572	D SILICON H 1SS131
3	ED-372893	D VARACTOR SVC321SPA A DBL
4	ED-349448	D VARACTOR 1SV147
5	ED-324526	D ZENER H HZ12 C1
6	ED-306010	D ZENER H HZ6 A2
7	EH-344434	FILTER CE BFU450C4N 0.450MHZ
8	EH-394759J	FILTER CE SFE10.7MS2GK-A
9	EH-338338	FILTER CE SFE10.7MS3GK-A [V]
10	EH-360924	FILTER LC BP BPMB6A [V]
11	EH-370069	FILTER LC LP 42B-1081-00
12	EH-394827J	FILTER LC LP 79-5299-12 [V]
13	EI-367572	IC BA15218
14	EI-361624	IC LA1265
15	EI-361622	IC LM7001
16	EI-359683	IC TA7343AP
17	EI-344422	OSC X'TAL HC-18/U 7.200MHZ
18	ES-362883	SW TACT SKHHLM [RESET]
19	ET-353897	TR DTC114ES
20	ET-354371	TR DTC124ES
21	ET-354094	TR DTC144WS
22	ET-349449	TR FET 2SK161 O,Y
23	ET-349458	TR FET 2SK192A Y
24	ET-337759	TR FET 2SK246 GR
25	ET-353899	TR 2SA1317 S,T,U
26	ET-393714J	TR 2SC2999 C,D,E
27	ET-397160J	TR 2SC3330 R,S,T,U,V
28	ET-394735J	TR 2SC3792 T05
29	ET-356437	TR 2SC930 D2,E,F
30	ET-366581	TR 2SD1762 E,F
31	EW-394418J	WIRE ASSY A3063 14P [AT-M400/L]
32	EW-395054J	WIRE ASSY A3063-2 14P [AT-M600/L]

2. P.C BOARD

Ref.No.	Part No.	Description
1	BA-A3063A030D	PC(#) TUNER BLK AT-M400(U)
2	BA-A3063A030E	PC(#) TUNER BLK AT-M400(V)
3	BA-A3063A030F	PC(#) TUNER BLK AT-M400L
4	BA-A3063A030A	PC(#) TUNER BLK AT-M600(U)
5	BA-A3063A030B	PC(#) TUNER BLK AT-M600(V)
6	BA-A3063A030C	PC(#) TUNER BLK AT-M600L

PC (#) TUNER BLK CONSISTS OF FOLLOWING P.C BOARD.

- TUNER P.C BOARD
- FRONT P.C BOARD

3. TUNER P.C BOARD (AT-M400/600)

Ref.No.	Part No.	Description
D201	ED-372893	D VARACTOR SVC321SPA A DBL
D202	ED-372893	D VARACTOR SVC321SPA A DBL
D301	ED-307572	D SILICON H 1SS131
D302	ED-307572	D SILICON H 1SS131
D303	ED-307572	D SILICON H 1SS131
D304	ED-307572	D SILICON H 1SS131
D401	ED-306010	D ZENER H HZ6 A2
D402	ED-307572	D SILICON H 1SS131
D501	ED-324526	D ZENER H HZ12 C1
D502	ED-307572	D SILICON H 1SS131
D503	ED-307572	D SILICON H 1SS131
D504	ED-307572	D SILICON H 1SS131
FE	BA-F0141A010B	PC FRONT END BLK FE41(V)
FL101	EH-360924	FILTER LC BP BPMB6A [V]
FL102-A	EH-394759J	FILTER CE SFE10.7MS2GK-A
FL102-B	EH-338338	FILTER CE SFE10.7MS3GK-A [V]
FL103-A	EH-394759J	FILTER CE SFE10.7MS2GK-A
FL103-B	EH-338338	FILTER CE SFE10.7MS3GK-A [V]
FL104	EH-394827J	FILTER LC LP 79-5299-12 [V]
FL201	EH-344434	FILTER CE BFU450C4N 0.450MHZ
FL301	EH-370069	FILTER LC LP 42B-1081-00
FL302	EH-370069	FILTER LC LP 42B-1081-00
IC101	EI-361624	IC LA1265
IC301	EI-359683	IC TA7343AP
IC302	EI-367572	IC BA15218
IC401	EI-361622	IC LM7001
L301	EO-353588	COIL FIX 1 LAP02 F05 2R2K [V]
L302	EO-353588	COIL FIX 1 LAP02 F05 2R2K [V]
SW1	ES-362883	SW TACT SKHHLM [RESET]
T101	EO-389617J	COIL DET 2 77-5073-04 10.7MHZ
T201	EO-395923J	COIL VARI 2 4334-298
T204	EO-363279	COIL OSC 2 A7NRS-9857X 150.0UH
T205	EO-356732	COIL IFT BCFLZ-450A
TM1	EJ-359031	TERMINAL LEVER YKD31-0215 P 2P
TR101	ET-356437	TR 2SC930 D2,E,F
TR102	ET-397160J	TR 2SC3330 R,S,T,U,V
TR103	ET-397160J	TR 2SC3330 R,S,T,U,V
TR301	ET-397160J	TR 2SC3330 R,S,T,U,V
TR302	ET-397160J	TR 2SC3330 R,S,T,U,V
TR303	ET-354094	TR DTC144WS
TR304	ET-354094	TR DTC144WS
TR401	ET-337759	TR FET 2SK246 GR
TR402	ET-397160J	TR 2SC3330 R,S,T,U,V
TR405	ET-353899	TR 2SA1317 S,T,U
TR406	ET-353899	TR 2SA1317 S,T,U
TR501	ET-366581	TR 2SD1762 E,F
TR502	ET-354371	TR DTC124ES
VC201	EC-394757J	C S-FIX H T05 VCT51F 5.5-30
VR201	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223 [AT-M600]
VR202	EV-389481J	R S-FIX H T05EVNDXAA03 0.1W473 [AT-M600]
VR301	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR302	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
X401	EI-344422	OSC X'TAL HC-18/U 7.200MHZ

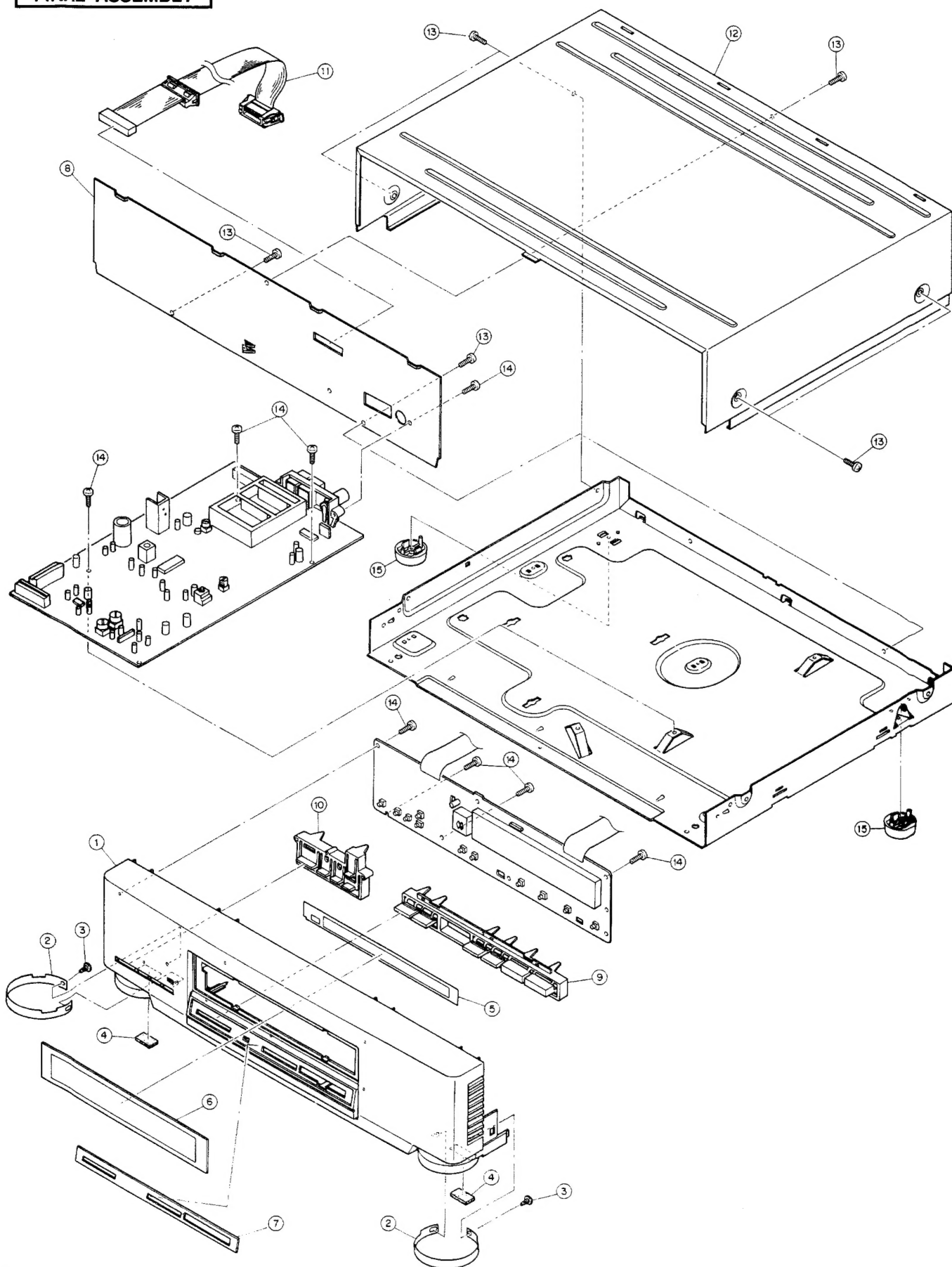
4. TUNER P.C BOARD (AT-M400L/600L)

Ref.No.	Part No.	Description
D1	ED-349448	D VARACTOR 1SV147
D2	ED-349448	D VARACTOR 1SV147
D4	ED-349448	D VARACTOR 1SV147
D201	ED-372893	D VARACTOR SVC321SPA A DBL
D202	ED-372893	D VARACTOR SVC321SPA A DBL
D205	ED-307572	D SILICON H 1SS131
D206	ED-307572	D SILICON H 1SS131
D301	ED-307572	D SILICON H 1SS131
D302	ED-307572	D SILICON H 1SS131
D303	ED-307572	D SILICON H 1SS131
D304	ED-307572	D SILICON H 1SS131
D401	ED-306010	D ZENER H HZ6 A2
D402	ED-307572	D SILICON H 1SS131
D501	ED-324526	D ZENER H HZ12 C1
D502	ED-307572	D SILICON H 1SS131
D503	ED-307572	D SILICON H 1SS131
D504	ED-307572	D SILICON H 1SS131
FL102	EH-394759J	FILTER CE SFE10.7MS2GK-A
FL103	EH-394759J	FILTER CE SFE10.7MS2GK-A
FL201	EH-344434	FILTER CE BFU450C4N 0.450MHZ
FL301	EH-370069	FILTER LC LP 42B-1081-00
FL302	EH-370069	FILTER LC LP 42B-1081-00
IC101	EI-361624	IC LA1265
IC301	EI-359683	IC TA7343AP
IC302	EI-367572	IC BA15218
IC401	EI-361622	IC LM7001
L1	EO-349461	COIL FIX 2 LINK
L2	EO-349462	COIL FIX 2 U147
L3	EO-349461	COIL FIX 2 LINK
L4	EO-349462	COIL FIX 2 U147
L6	EO-368618	COIL FIX 1 LAL02 F05 2R2M
L7	EO-353687	COIL OSC 2 E525HN-110003
SW1	ES-362883	SW TACT SKHHLM [RESET]
T1	EO-337640	COIL IFT 119AC-15533X 10.7MHZ
T101	EO-389617J	COIL DET 2 77-5073-04 10.7MHZ
T201	EO-394422J	COIL VARI 2 4334-285
T202	EO-400666J	COIL VARI 2 4334-304
T203	EO-363279	COIL OSC 2 A7NRS-9857X 150.0UH
T204	EO-352089	COIL OSC 2 7BRS-9098X 580.0UH
T205	EO-356732	COIL IFT BCFLZ-450A
TM1	EJ-359031	TERMINAL LEVER YKD31-0215 P 2P
TR1	ET-349449	TR FET 2SK161 O,Y
TR2	ET-393714J	TR 2SC2999 C,D,E
TR3	ET-356437	TR 2SC930 D2,E,F
TR4	ET-349449	TR FET 2SK161 O,Y
TR101	ET-356437	TR 2SC930 D2,E,F
TR102	ET-397160J	TR 2SC3330 R,S,T,U,V
TR103	ET-397160J	TR 2SC3330 R,S,T,U,V
TR201	ET-349458	TR FET 2SK192A Y
TR202	ET-394735J	TR 2SC3792 T05
TR203	ET-353897	TR DTC114ES
TR301	ET-397160J	TR 2SC3330 R,S,T,U,V
TR302	ET-397160J	TR 2SC3330 R,S,T,U,V
TR303	ET-354094	TR DTC144WS
TR304	ET-354094	TR DTC144WS
TR401	ET-337759	TR FET 2SK246 GR
TR402	ET-397160J	TR 2SC3330 R,S,T,U,V
TR403	ET-354094	TR DTC144WS
TR404	ET-354094	TR DTC144WS
TR405	ET-353899	TR 2SA1317 S,T,U
TR406	ET-353899	TR 2SA1317 S,T,U
TR501	ET-366581	TR 2SD1762 E,F
TR502	ET-354371	TR DTC124ES
VC201	EC-394757J	C S-FIX H T05 VCT51F 5.5-30
VC202	EC-394758J	C S-FIX H T05 VCT51G 7.5-50
VR201	EV-389479J	R S-FIX H T05EVNDXAA03 0.1W223 [AT-M600L]
VR202	EV-389481J	R S-FIX H T05EVNDXAA03 0.1W473 [AT-M600L]
VR301	EV-389476J	R S-FIX H T05EVNDXAA03 0.1W103
VR302	EV-389489J	R S-FIX H T05EVNDXAA03 0.1W472
X401	EI-344422	OSC X" TAL HC-18/U 7.200MHZ

5. FRONT P.C BOARD

Ref.No.	Part No.	Description
D601	ED-307572	D SILICON H 1SS131
D602	ED-307572	D SILICON H 1SS131
D603	ED-307572	D SILICON H 1SS131
D604	ED-307572	D SILICON H 1SS131
D605	ED-307572	D SILICON H 1SS131
		[V]
D606	ED-307572	D SILICON H 1SS131
		[U]
D607	ED-307572	D SILICON H 1SS131
D608	ED-307572	D SILICON H 1SS131
IC601-A	EI-394426J	IC TMP47C870N-4671 FXXTUNR1 [AT-M400/L]
IC601-B	EI-394790J	IC TMP47C870N-4659 FXATUNR2 [AT-M600/L]
IN601-A	EM-392847J	IND FL FIP9BKM8 CHARACTER [AT-M400/L]
IN601-B	EM-392846J	IND FL FIP14JM8 CHARACTER [AT-M600/L]
PH601	ET-381683J	DETECTOR A1QH3021H0
SW601	ES-394427J	SW TACT SOR-133HS T05
SW602	ES-394427J	SW TACT SOR-133HS T05
SW603	ES-394427J	SW TACT SOR-133HS T05
SW604	ES-394427J	SW TACT SOR-133HS T05
SW605	ES-394427J	SW TACT SOR-133HS T05
SW606	ES-394427J	SW TACT SOR-133HS T05
SW607	ES-394427J	SW TACT SOR-133HS T05
SW608	ES-394427J	SW TACT SOR-133HS T05
SW609	ES-394427J	SW TACT SOR-133HS T05
SW610	ES-394427J	SW TACT SOR-133HS T05
SW611	ES-394427J	SW TACT SOR-133HS T05
TR601	ET-354365	TR DTC114YS
TR602	ET-369248	TR DTA114YS
TR603	ET-354365	TR DTC114YS
TR604	ET-369248	TR DTA114YS
TR605	ET-354365	TR DTC114YS
		[AT-M600/L]
TR606	ET-369248	TR DTA114YS
		[AT-M600/L]
TR607	ET-354365	TR DTC114YS
		[AT-M600/L]
TR608	ET-369248	TR DTA114YS
		[AT-M600/L]
TR609	ET-354365	TR DTC114YS
		[AT-M600/L]
TR610	ET-369248	TR DTA114YS
		[AT-M600/L]
TR611	ET-354371	TR DTC124ES
TR612	ET-354371	TR DTC124ES
X601	EI-389618J	OSC X" TAL AT-51 4.19404MHZ

FINAL ASSEMBLY



6. FINAL ASSEMBLY

Ref.No.	Part No.	Description
1-A	SP-390530M	PANEL FRONT X [AT-M400/L]
1-B	SP-390529M	PANEL FRONT A [AT-M600/L]
2	SE-394190M	PLATE FOOT
3	ZW-394496J	CANOE CLIP NO.74
4	SA-394136M	CUSHION FOOT
5-A	SE-394372M	FILTER FLD(AT-X) [AT-M400/L]
5-B	SE-394156M	FILTER FLD(AT) [AT-M600/L]
6	SE-394128M	WINDOW AT/CD
7	SE-394184M	DECORATION PLATE CENTER AT(SG)
8-A	SP-394124M1	PANEL REAR AT-M400(U)
8-B	SP-394362M1	PANEL REAR AT-M400(E)
8-C	SP-394363M1	PANEL REAR AT-M400(V)
8-D	SP-394125M1	PANEL REAR AT-M600(U)
8-E	SP-394364M1	PANEL REAR AT-M600(E)
8-F	SP-394365M1	PANEL REAR AT-M600(V)
9	SK-394134M	BUTTON TUNING
10	SK-394135M	BUTTON TIMER
11-A	EW-394418J	WIRE ASSY A3063 14P [AT-M400/L]
11-B	EW-395054J	WIRE ASSY A3063-2 14P [AT-M600/L]
12	SP-394096M	COVER UPPER AT
13	ZS-387983J	ST BID30X08STL BNI EARTH LOCK
14	ZS-331182	BT BID30X08STL BNI
15	SA-394127M	FOOT REAR

NOTE:

Parts will not be supplied if they are not listed in the parts list, even if they appear on the assembling illustrations with reference No.

7. ACCESSARY

Ref.No.	Part No.	Description
1	EE-394420M	ANT LOOP LA-75
2	EE-396107M	ANT WIRE FM *A3063
3	EJ-394417J	SOCKET COAX HXC 0526-01-010

ABBREVIATIONS (TUNER)

ABBREVIATION	EXPLANATION	ABBREVIATION	EXPLANATION
AFC	Auto Frequency Control	MEMO	MEMOry
AGC	Auto Gain Control	MI-COM	Micro-COMputer
ALC	Auto Level Control	MIN	MINimum
AM	Amplitude Modulation	MIX	MIXing
AMP	AMPlifier	MPX	Multi pleX
ANT	ANTenna	MW	Medium Wave (frequency)
BATT	BATTery	NC	No Connection
BLK	BLock	NFB	Negative Feed Back
BUFF	BUFFer	OSC	OSCillator
COMP	COMPalator	PCB	Printed Circuit Board
DET	DETECT (DETctor)	PLL	Phase Locked Loop
FLD		Q.D	Quadrature Detector
FM	Frequency Modulation	Rch	Right channel
FREQ	FREQuency	REF	REFerence
GND	GrouND	REG	REGulator
H	High	RF	Radio Frequency
HPF	High Pass Filter	SEG	SEGment
IF	Intermediate Frequency	SELE	SELEctor
IHF	Institut of High Fidelity	SENS	SENSitivity
IND	INDicator	SIG	SIGnal
I/O	In/Out	S/N	Signal to Noise Ratio
JW	Jumper Wire	SSG	Standard Signal Generator
L	Low	STD	STanDard
LCD	Liquid Crystal Display	SW	SWitch: Short Wave (frequency)
Lch	Left channel	THD	Total Harmonic Distortion
LED	Light Emitting Diode	TP	Test Point
LPF	Low Pass Filter	VCO	Voltage Controlled Oscillator
LW	Long Wave (Frequency)	VR	Variable Resistor
		X'TAL	Crystal

AKAI ELECTRIC CO., LTD.

12-14, 2-Chome, Higashi-Kojiya, Ohta-ku, Tokyo, Japan

SERVICE DEPARTMENT TEL: Tokyo (745)9884 TELEX: J26261

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AKAI

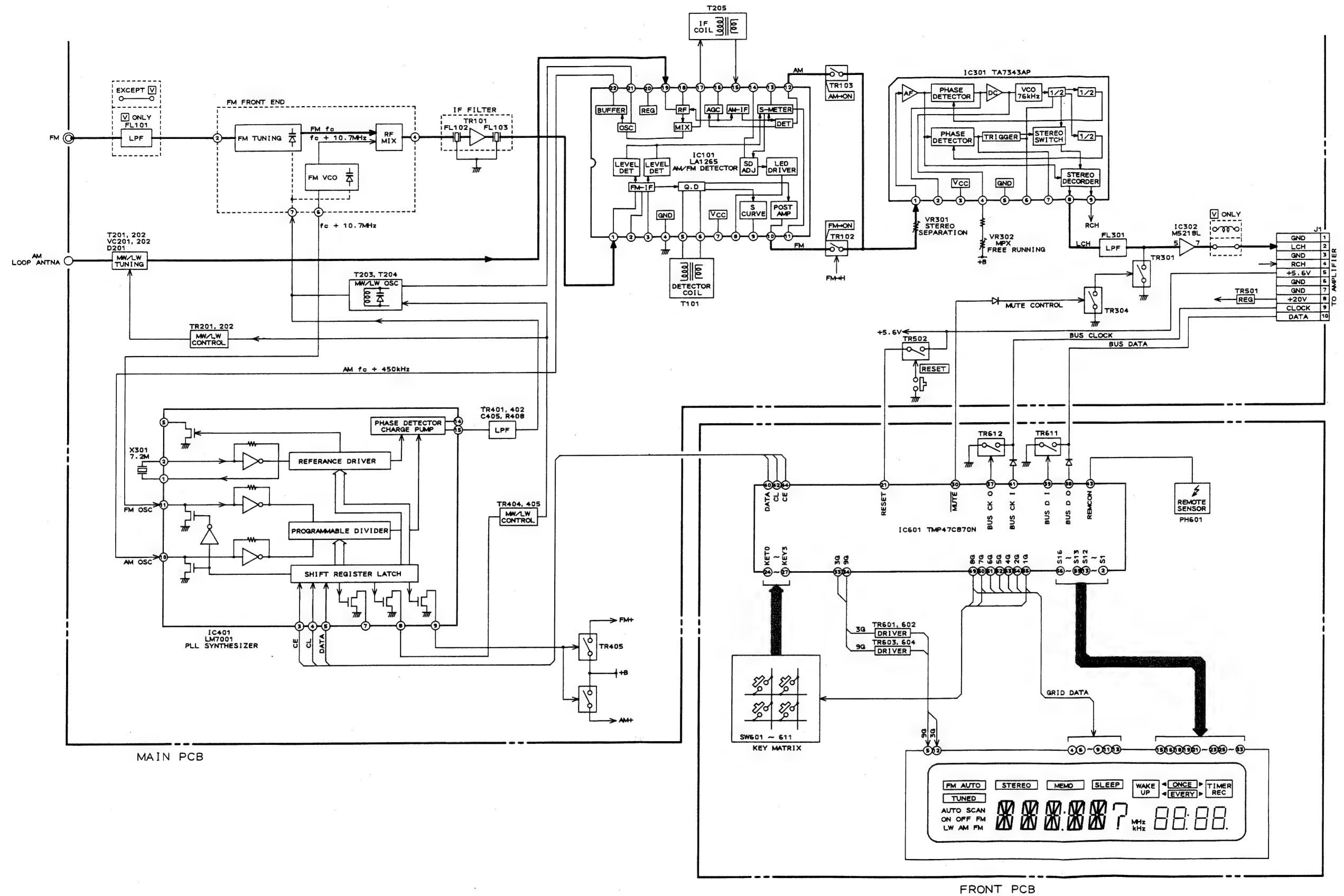
MODEL **AT-M400/L**

MODEL **AT-M600/L**

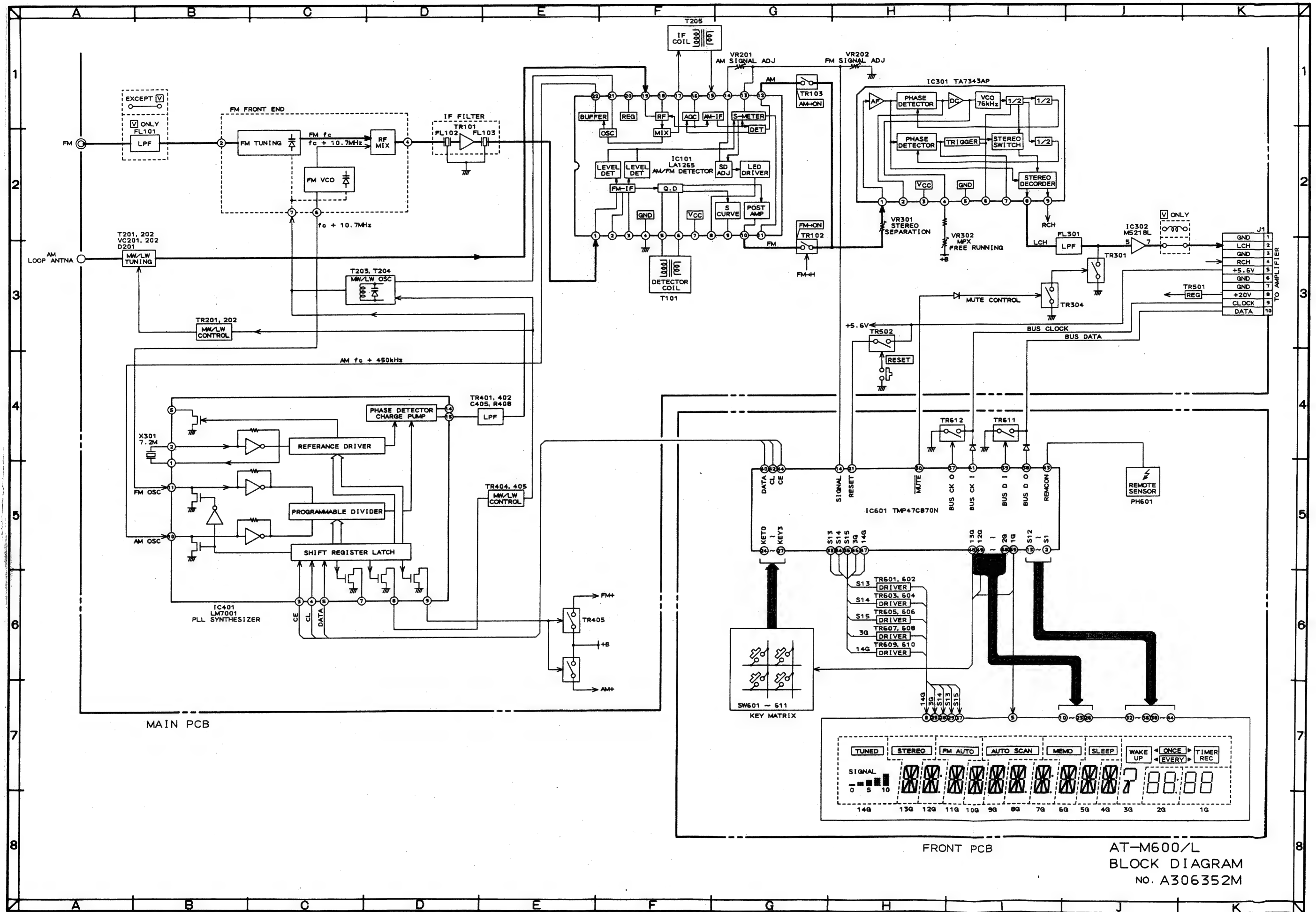
SCHEMATIC DIAGRAMS AND PC BOARDS

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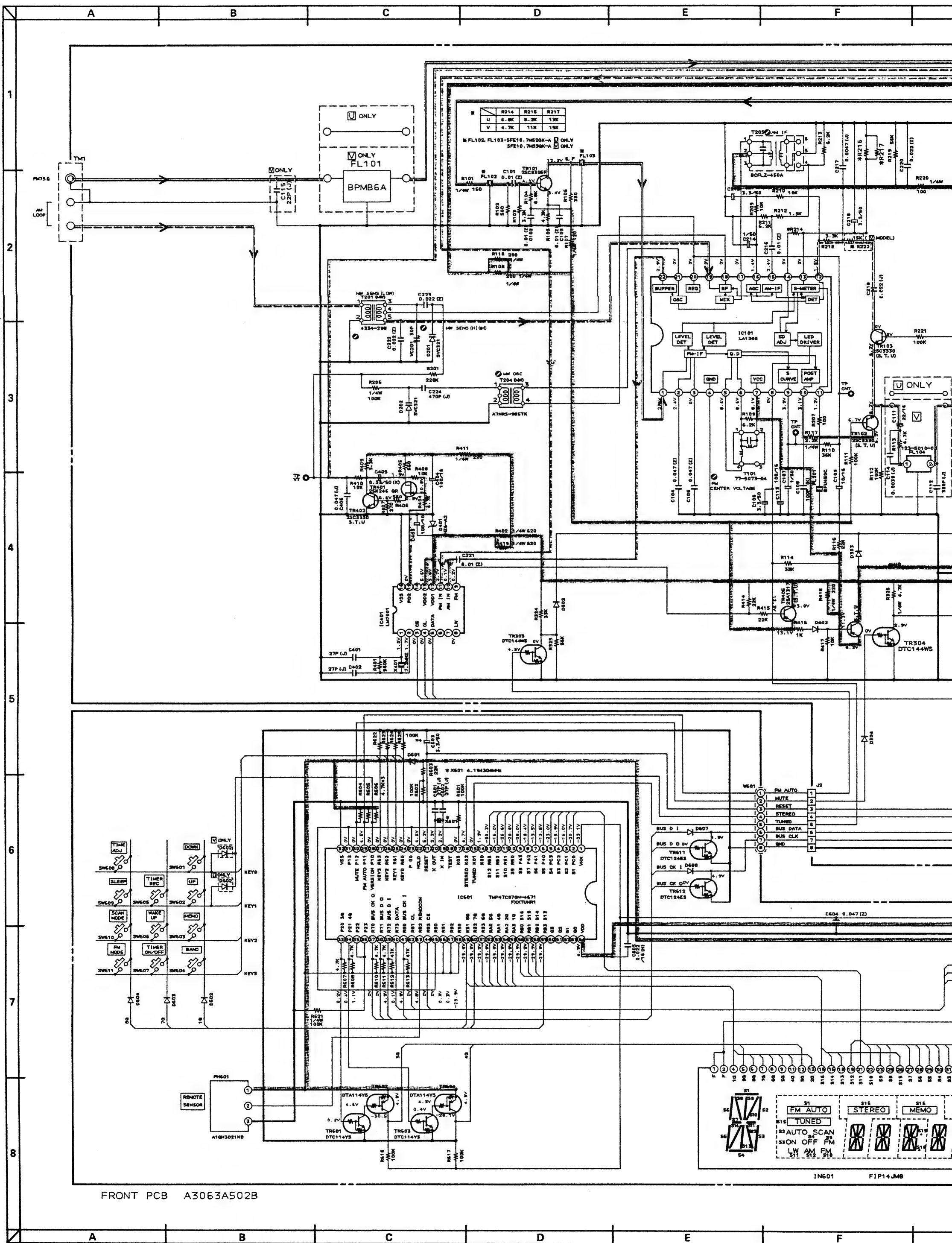
1. AT-M400/L BLOCK DIAGRAM	2
2. AT-M600/L BLOCK DIAGRAM	3
3. MAIN AND OTHER PC BOARDS	4
4. AT-M400 SCHEMATIC DIAGRAM	5
5. AT-M400L SCHEMATIC DIAGRAM	6
6. MAIN AND OTHER PC BOARDS	7
7. MAIN AND OTHER PC BOARDS	8
8. AT-M600 SCHEMATIC DIAGRAM	9
9. AT-M600L SCHEMATIC DIAGRAM	10
10. MAIN AND OTHER PC BOARDS	11
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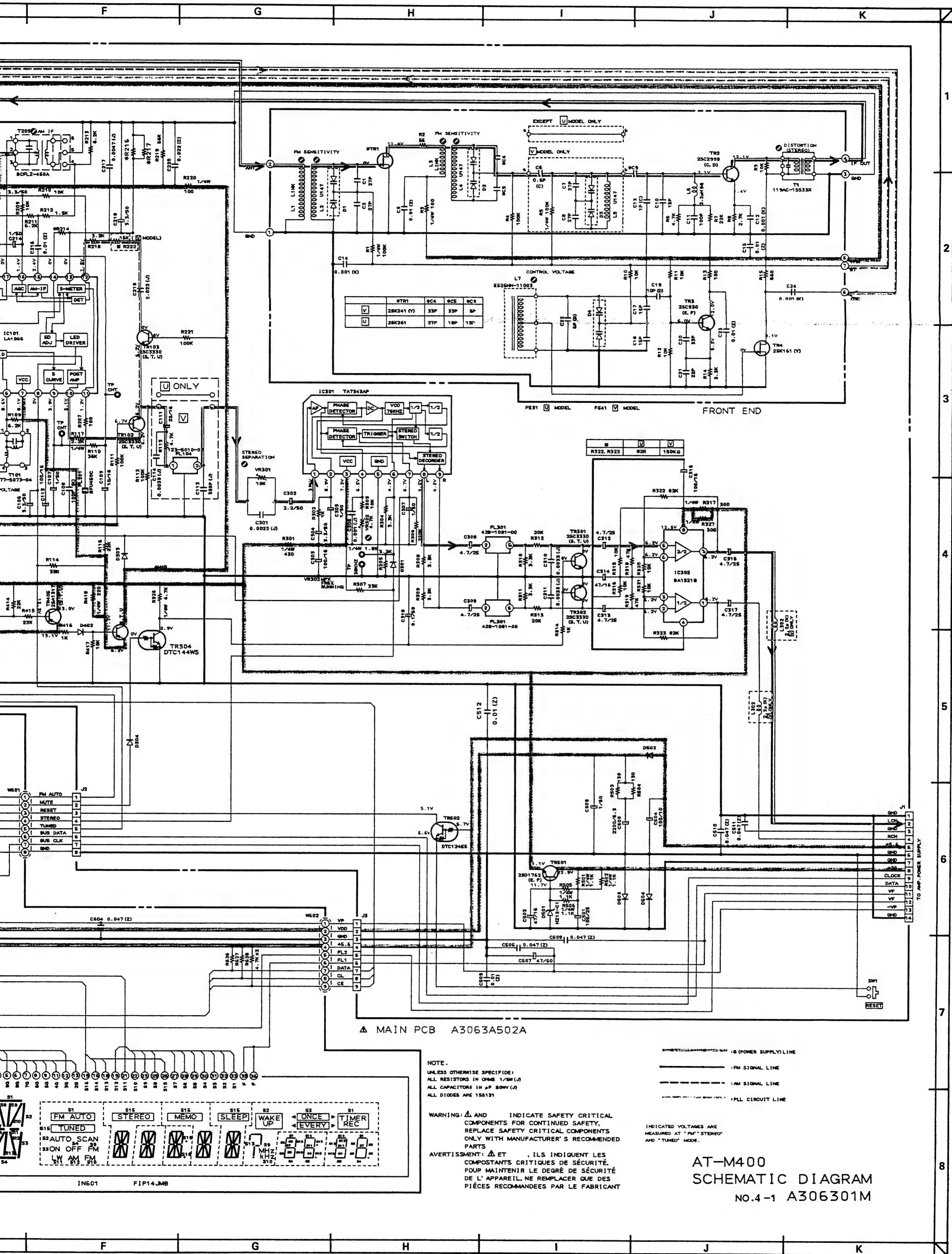


AT-M400/L
BLOCK DIAGRAM
no. A306351M

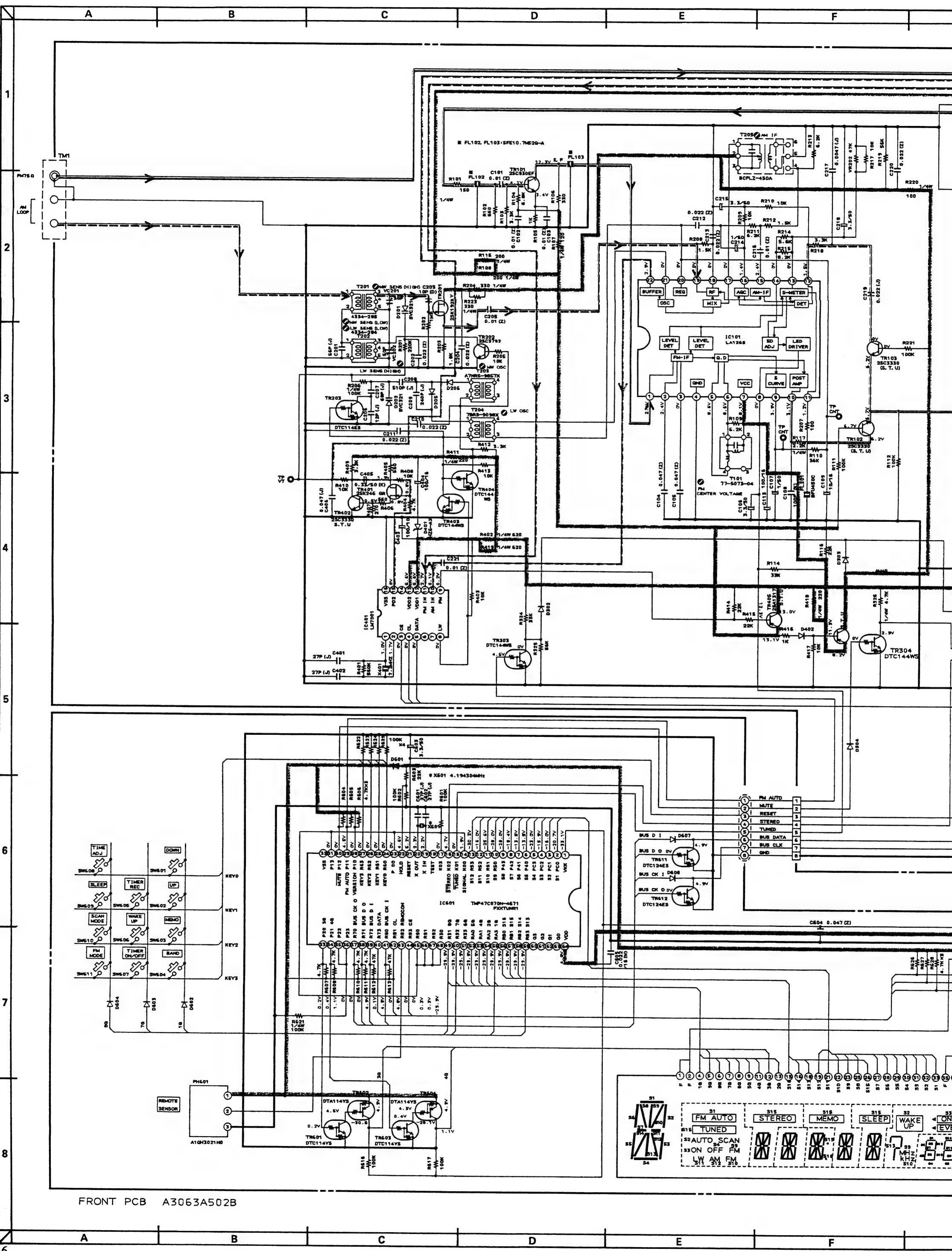


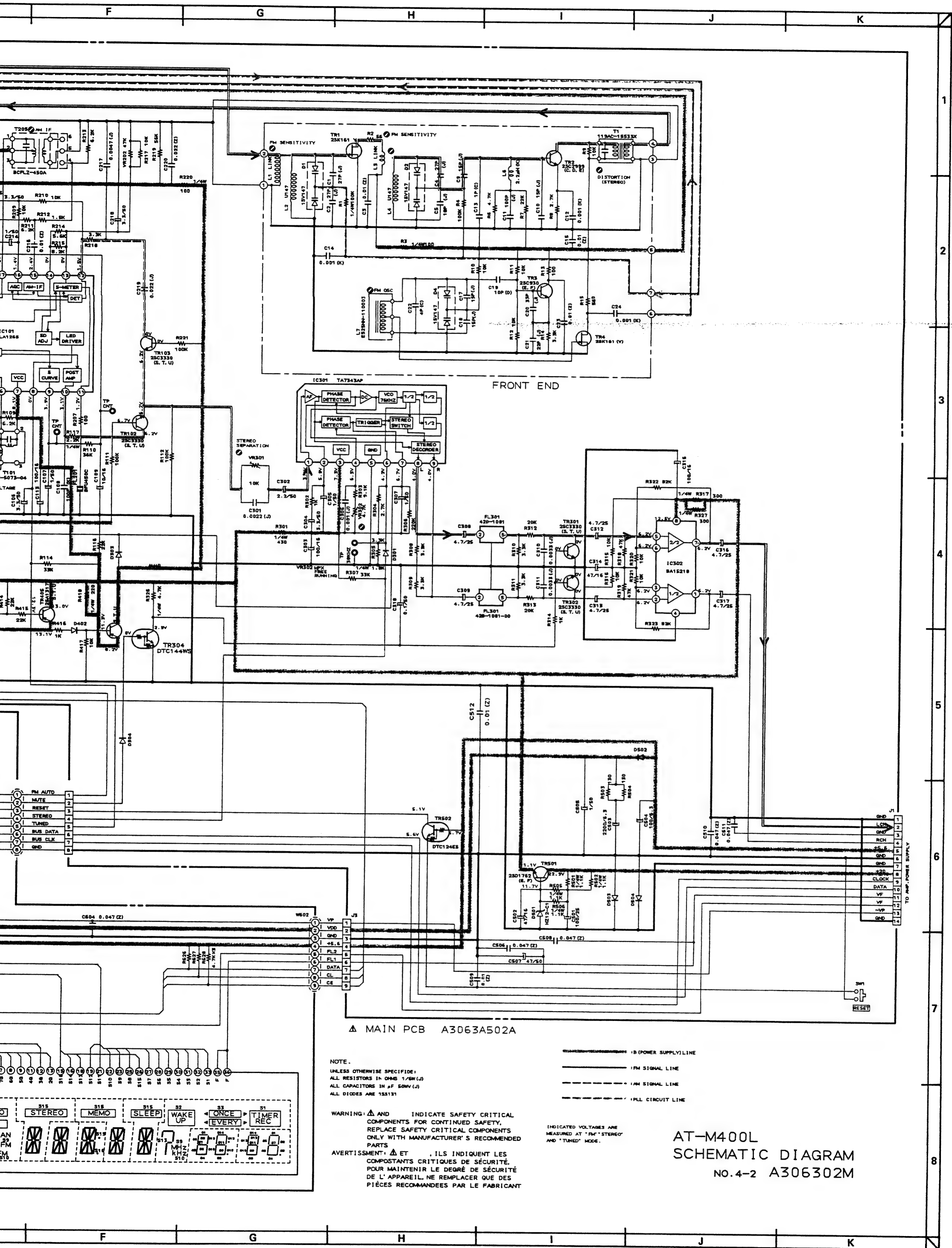
AT-M600/L
BLOCK DIAGRAM
NO. A306352M





Rev. 287





Δ MAIN PCB A3063A502A

NOTE.

UNLESS OTHERWISE SPECIFIED:
ALL RESISTORS IN OHMS 1/4W (J)
ALL CAPACITORS IN μF 50V (J)
ALL DIODES ARE 1N5131

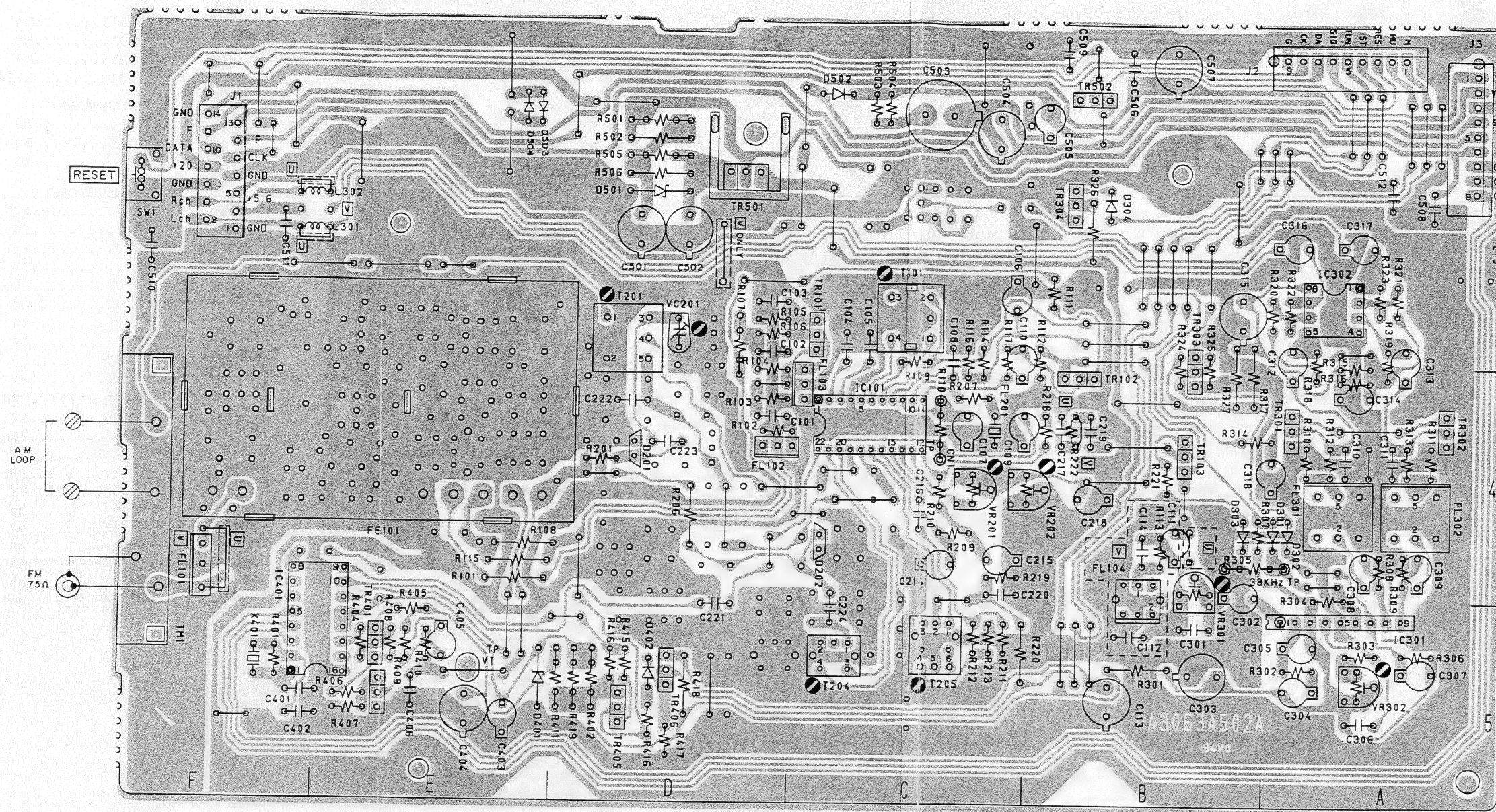
WARNING: Δ AND Δ INDICATE SAFETY CRITICAL COMPONENTS FOR CONTINUED SAFETY. REPLACE SAFETY CRITICAL COMPONENTS ONLY WITH MANUFACTURER'S RECOMMENDED PARTS.

AVERTISSEMENT: Δ ET Δ ILS INDIQUENT LES COMPOSANTS CRITIQUES DE SÉCURITÉ. POUR MAINTENIR LE DEGRÉ DE SÉCURITÉ DE L'APPAREIL, NE REMPLACER QUE DES PIÈCES RECOMMANDÉES PAR LE FABRICANT.

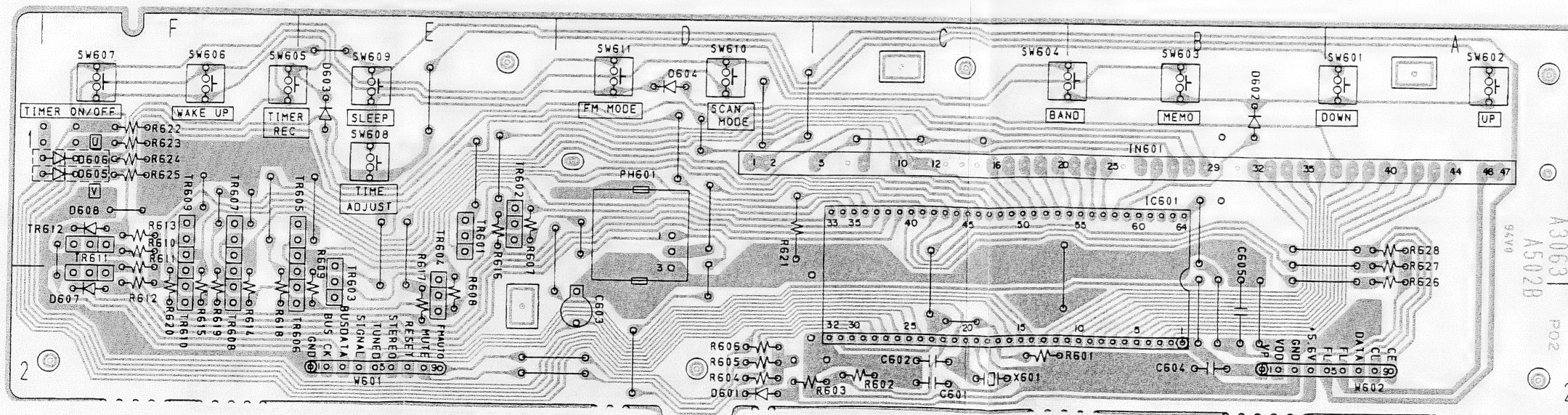
TO AMP. POWER SUPPLY
FM SIGNAL LINE
AM SIGNAL LINE
PLL CIRCUIT LINE

INDICATED VOLTAGES ARE MEASURED AT "FM" STEREO AND "TUNED" MODE.

AT-M400L
SCHEMATIC DIAGRAM
No. 4-2 A306302M



MAIN PCB A3063A502AJI U V Model



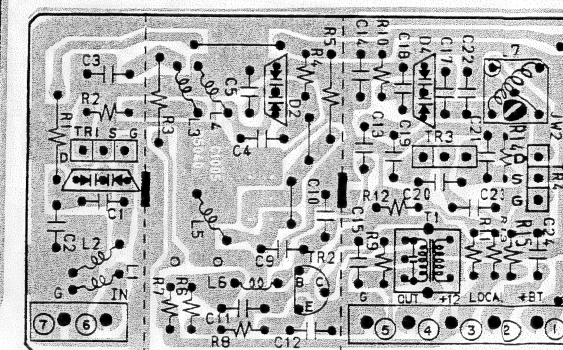
FRONT PCB A3063A502BJI

PRINCIPAL PARTS LOCATION

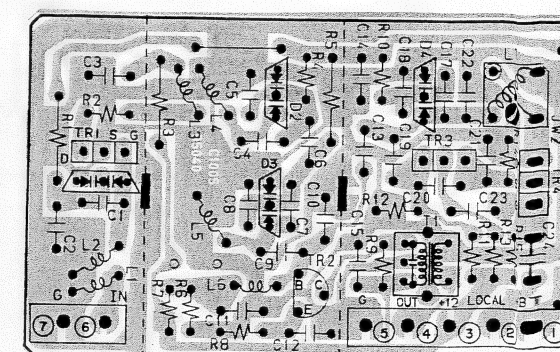
ICS
 IC101.....C4
 IC301.....A5
 IC302.....A3
 IC401.....E,F5

CONNECTORS
 J1.....F3
 J2.....A3
 J3.....A3

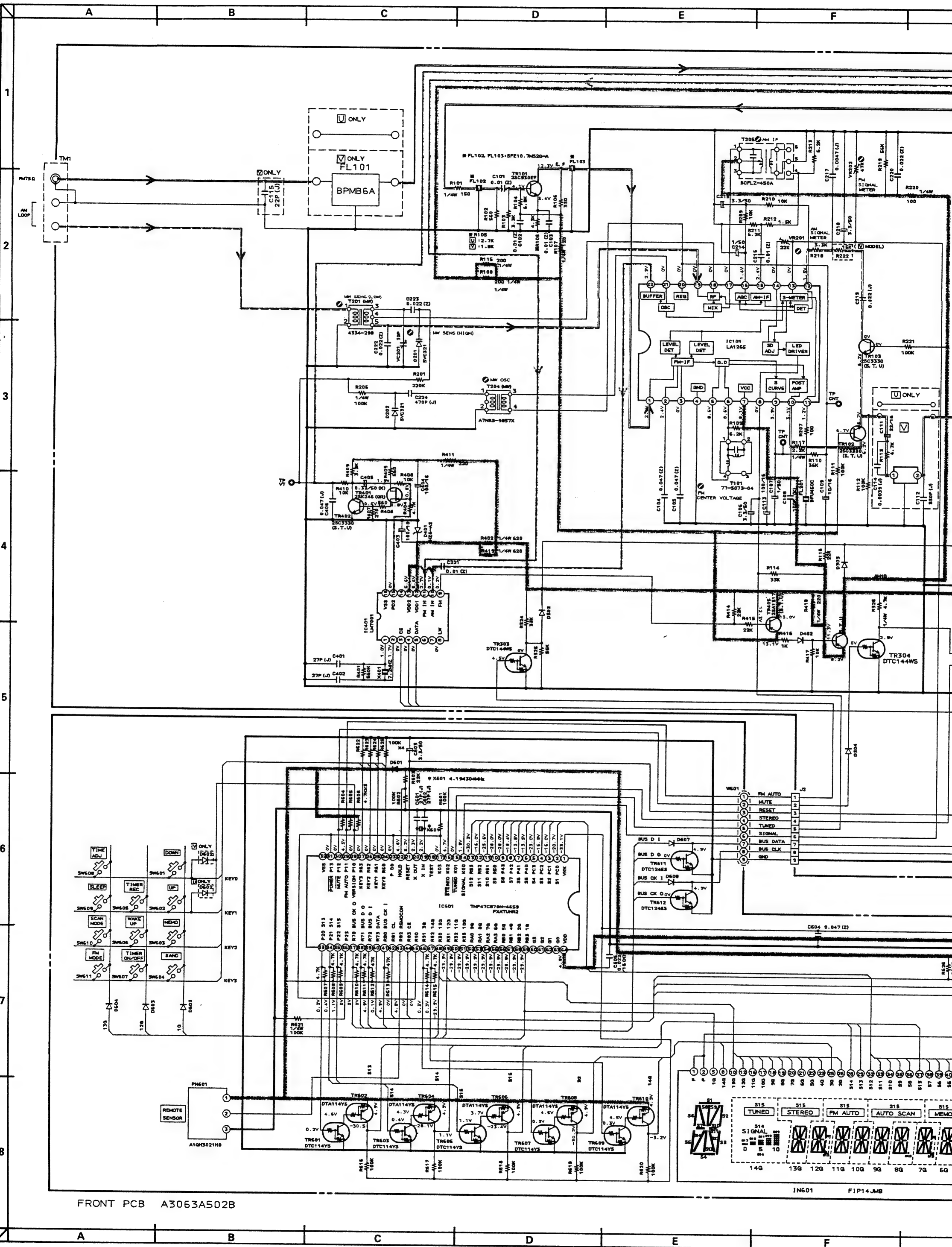
TRANSISTORS
 TR101.....C3
 TR102.....B4
 TR103.....B4
 TR301.....A4
 TR302.....A4
 TR303.....B3,4
 TR304.....B3
 TR401.....E5
 TR402.....E5
 TR405.....D5
 TR406.....D5
 TR501.....D3
 TR502.....B3

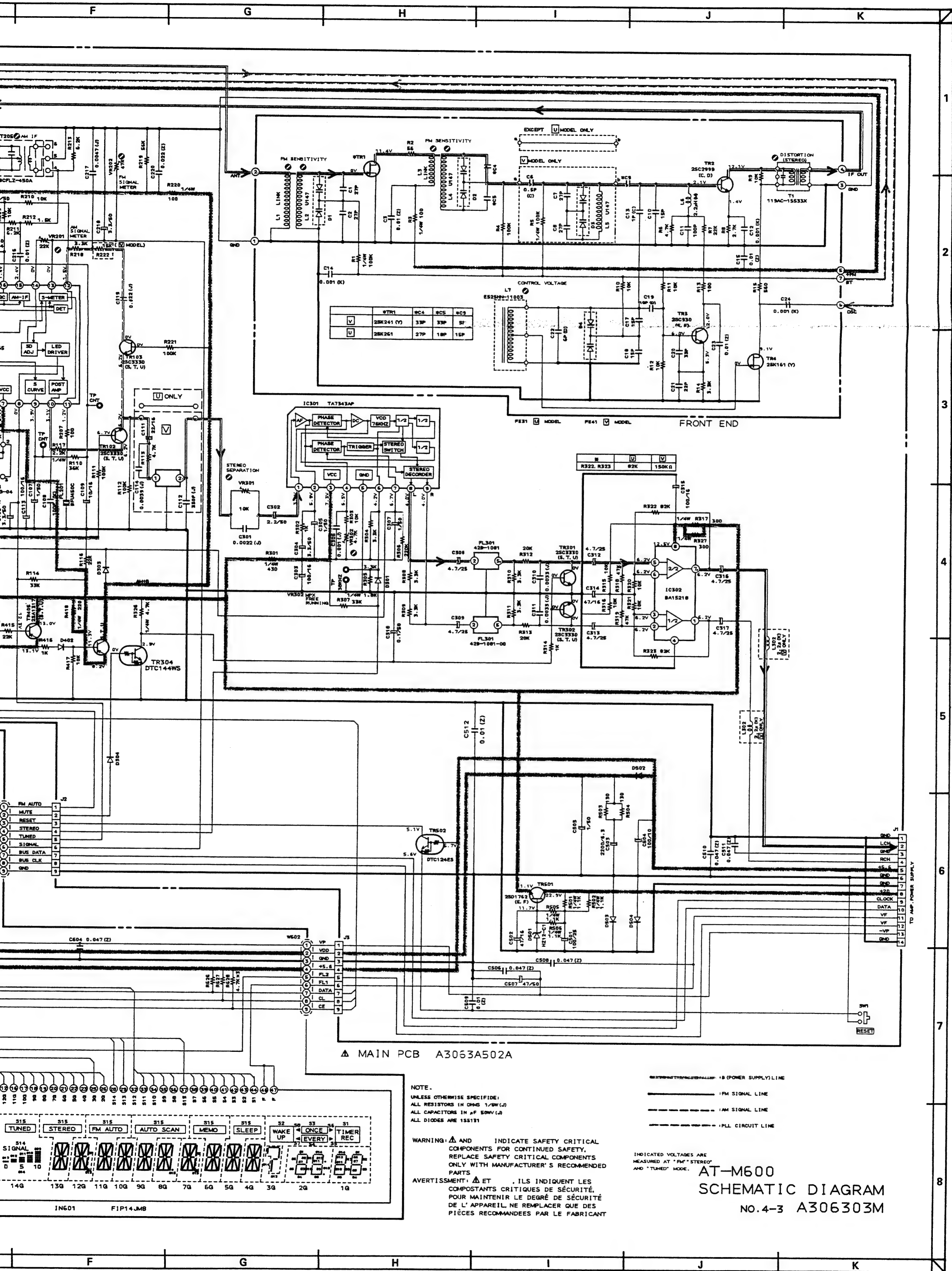


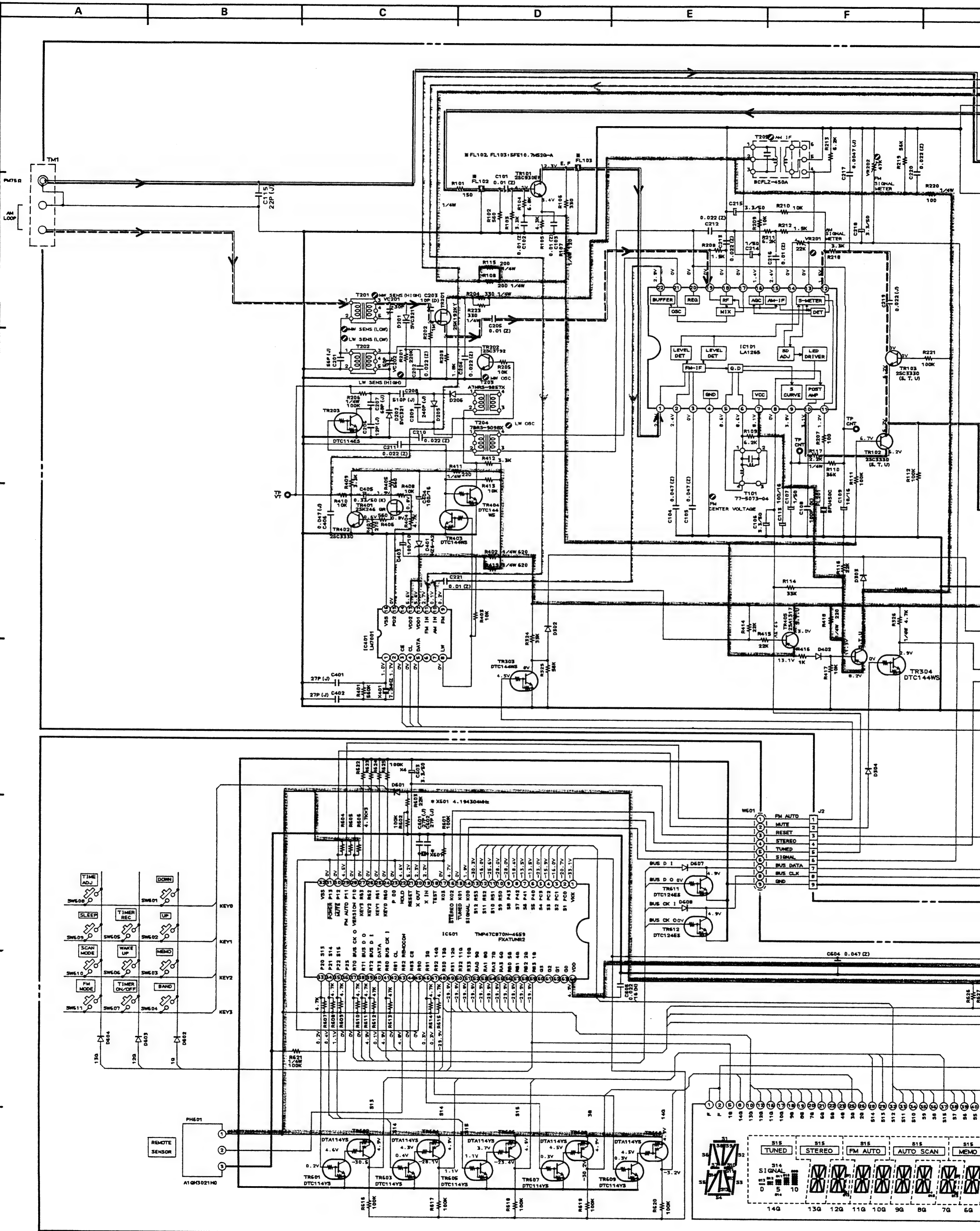
FRONT END



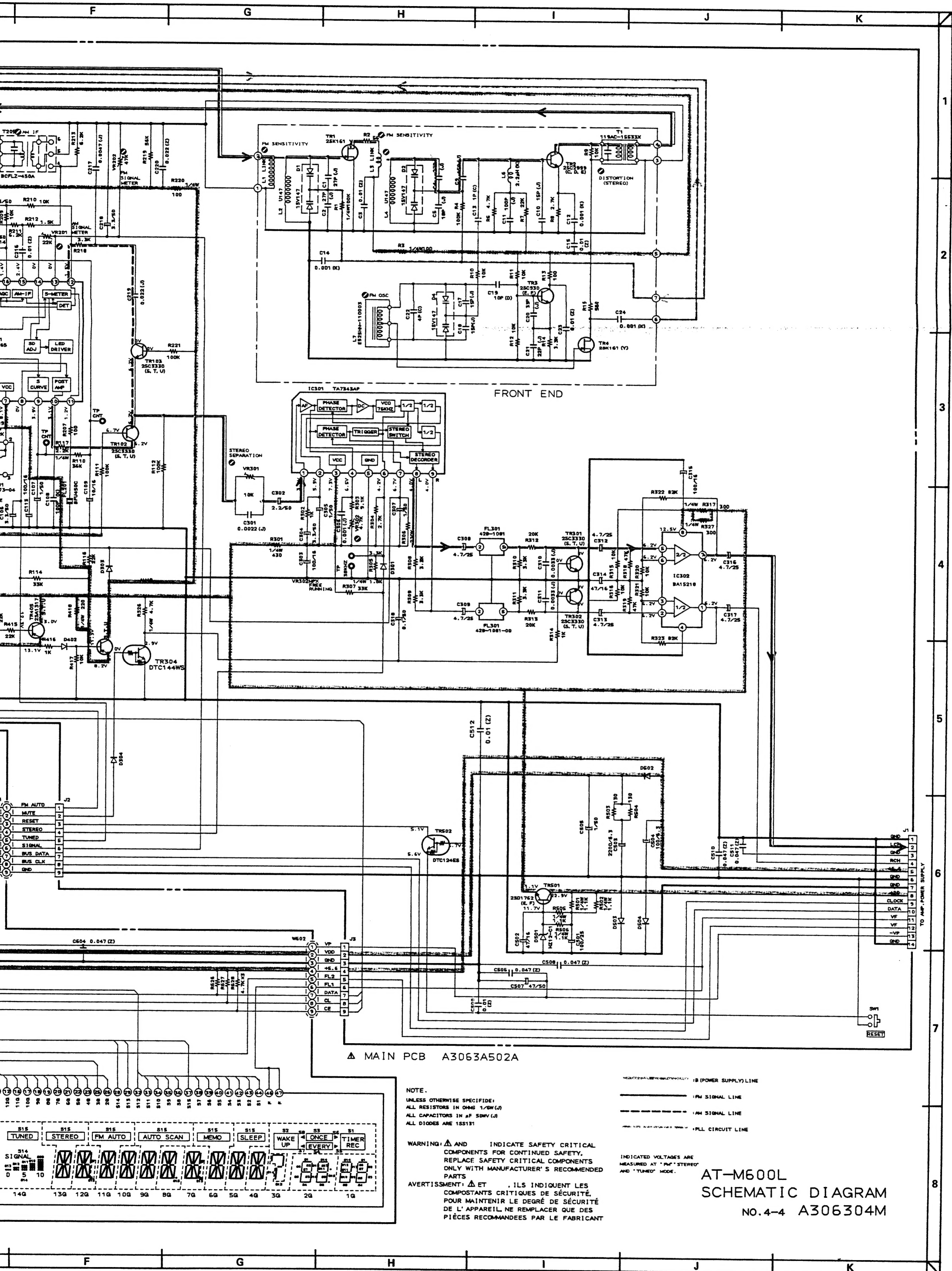
FRONT END PCB
 V MODEL ONLY

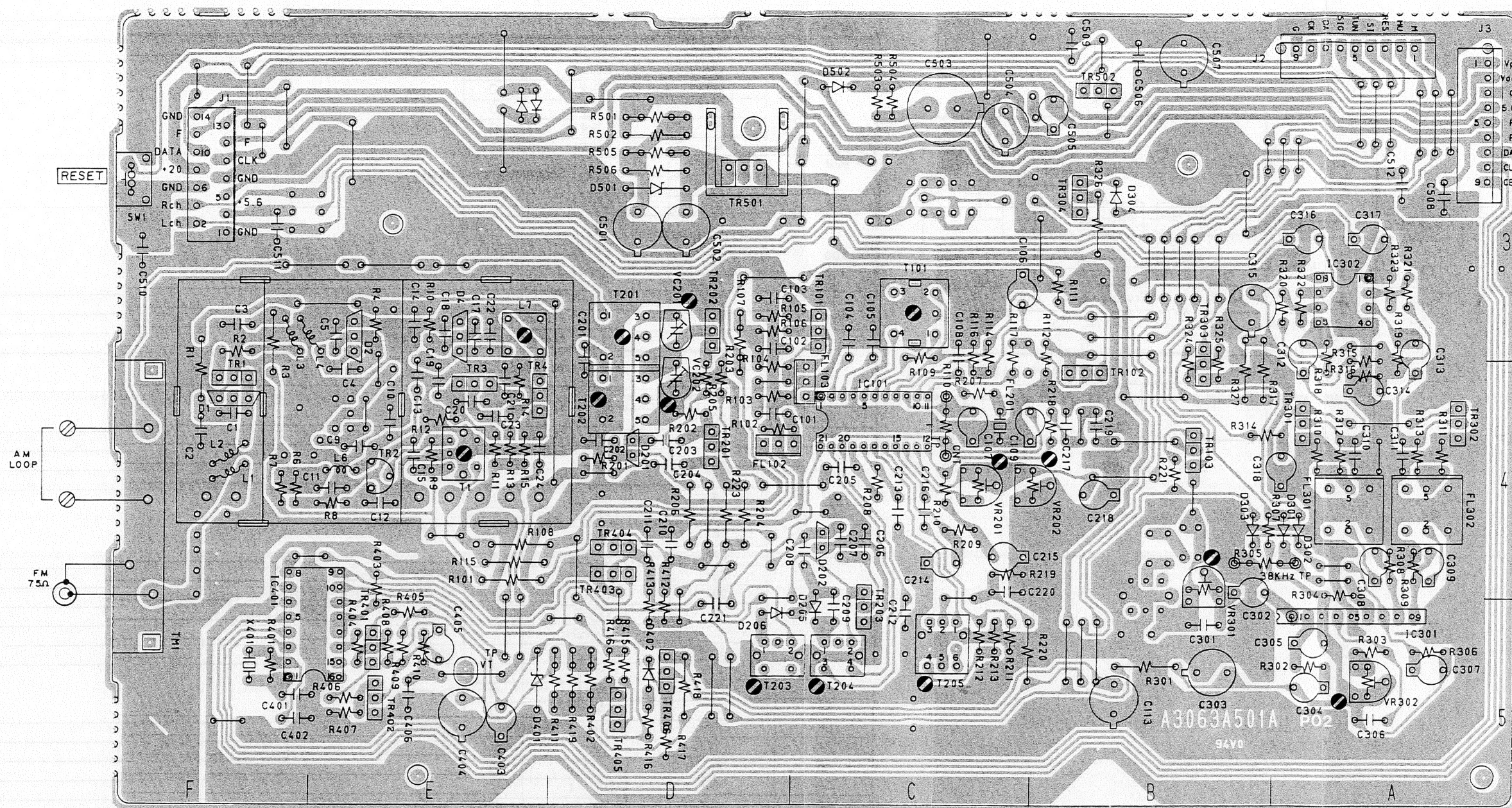




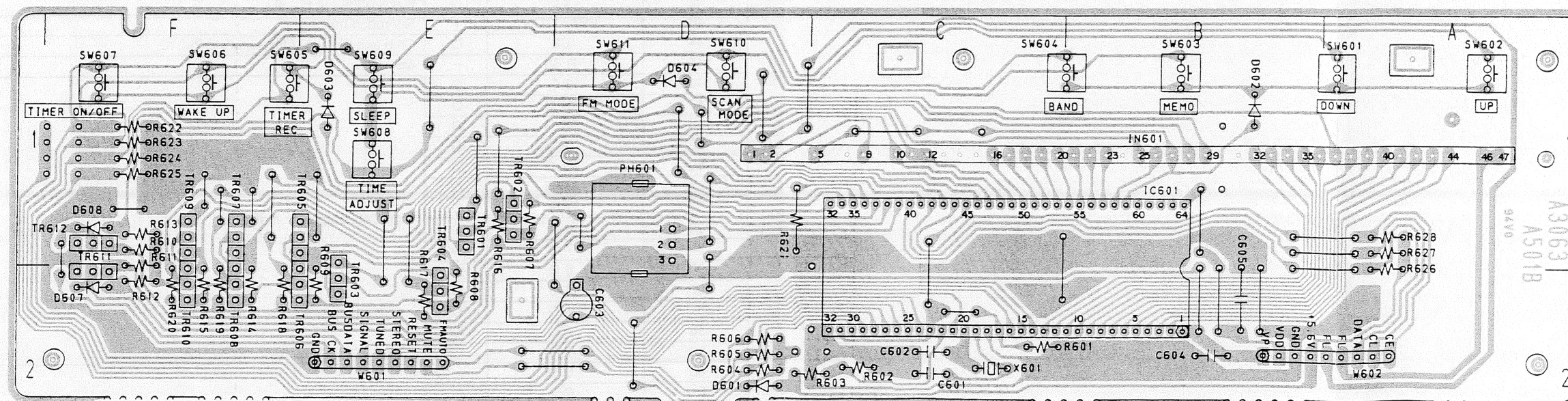


FRONT PCB A3063A502B





MAIN PCB A3063A501AJ1 [B] [E] Model



FRONT PCB A3063A501BJ1 [B] [E] Model

PRINCIPAL PARTS LOCATION

ICS
IC101.....C4
IC301.....A5

CONNECTORS
J1.....F3
J2.....A3
J3.....A3

TRANSISTORS
TR1.....F4
TR2.....E4
TR3.....E4
TR4.....E4
TR101.....C3
TR102.....B4
TR103.....B4
TR201.....D4
TR202.....D3
TR203.....C4, 5
TR301.....A4
TR302.....A4
TR304.....B4
TR401.....E5
TR402.....E5
TR403.....D4
TR404.....D4
TR405.....D5
TR406.....D5
TR501.....D3
TR502.....B3

Pin diagram of the LM7001 integrated circuit. The chip is shown with pins 1 through 16. Pin 1 is labeled KOUT, pin 2 is XIN, pin 3 is CE, pin 4 is CL, pin 5 is DATA, pin 6 is SYC, pin 7 is BO1, pin 8 is BO2, pin 9 is BO3, pin 10 is AMIN, pin 11 is FMIN, pin 12 is VDD1, pin 13 is VDD2, pin 14 is PDI, pin 15 is PD2, and pin 16 is VSS.

PIN NO.	PORT NAME	I/O	DESCRIPTION
1	VKK	I	Power input (-30 V)
2	S 1	O	Segment output Indicator.
3	S 2	O	
4	S 3	O	
5	S 4	O	
6	S 5	O	
7	S 6	O	
8	S 7	O	
9	S 8	O	
10	S 9	O	
11	S 10	O	
12	S 11	O	
13	S 12	O	
14	SIGNAL	I	Signal mode input.
15	TUNED	I	Tuned mode input. L: TUNED
16	STEREO	I	Stereo mode input. L: STEREO
17	K 03	-	Not used.
18	TEST	-	
19	X IN	I	Oscillator for clock.
20	X OUT	O	
21	RESET	I	Reset input.
22	HOLD	I	Power down detect.
23	P 00	-	Not used.
24	KEY 0	I	Key scan input from key matrix.
25	KEY 1	I	
26	KEY 2	I	
27	KEY 3	I	
28	VERSION	O	Output for Version Judge.
29	FM AUTO	O	FM Auto control. L: FM MANUAL H: FM AUTO
30	MUTE	O	Mute control. L: MUTE ON H: MUTE OFF
31	POWER	-	Not used.
32	VSS	-	GND
33	S 13	O	Segment output Indicator.
34	S 14	O	
35	S 15	O	
36	P23	-	Not used.
37	CK 0	O	Clock output.
38	DATA 0	O	Data output.
39	DATA I	I	Data input.
40	DATA	O	Transfer data to PLL IC.
41	CK I	I	Clock input.
42	CL	O	Clock output to PLL IC.
43	REMOCON	I	Remocon data input.
44	CE	O	Chip enable output for selecting PLL IC.
45	R 90	-	Not used.
46	3 G	O	Digit Data output for Indicator.
47	14 G	O	
48	13 G	O	
49	12 G	O	
50	11 G	O	
51	10 G	O	
52	9 G	O	
53	8 G	O	
54	7 G	O	
55	6 G	O	
56	5 G	O	
57	4 G	O	
58	2 G	O	
59	1 G	O	
60	Q 3	-	Not used.
61	Q 2	-	
62	Q 1	-	
63	Q D	-	
64	VDD	-	+B (+5 V)

PIN NO.	PORT NAME	I/O	DESCRIPTION
1	VKK	I	Power input (-30 V)
2	S 1	O	Segment output Indicator.
3	S 2	O	
4	S 3	O	
5	S 4	O	
6	S 5	O	
7	S 6	O	
8	S 7	O	
9	S 8	O	
10	S 9	O	
11	S 10	O	
12	S 11	O	
13	S 12	O	
14	K 00	-	Not used.
15	TUNED	I	Tuned mode input.
16	STEREO	I	Stereo mode input.
17	K 03	-	Not used.
18	TEST	-	
19	X IN	I	Oscillator for clock.
20	X OUT	O	
21	RESET	I	Reset input.
22	HOLD	I	Power down detect.
23	P 00	-	Not used.
24	KEY 0	I	Key scan input from key matrix.
25	KEY 1	I	
26	KEY 2	I	
27	KEY 3	I	
28	VERSION	O	Output for Version Judge.
29	FM AUTO	O	L: FM MANUAL H: FM AUTO
30	MUTE	O	Mute control. L: MUTE ON H: MUTE OFF
31	P13	-	Not used.
32	VSS	-	GND
33	3 G	O	Digit Data output Indicator.
34	9 G	O	
35	P22	-	Not used.
36	P23	-	
37	CK 0	O	Clock output.
38	DATA OUT	O	Data output.
39	DATA IN	I	Data input.
40	DATA	O	Transfer data to PLL IC.
41	CLK I	I	Clock input.
42	CL	O	Clock output to PLL IC.
43	REMOCON	I	Remocon data input.
44	CE	O	Chip enable output for selecting PLL IC.
45	R 90	-	Not used.
46	R 91	-	
47	R 92	-	
48	R 30	-	
49	8 G	O	Digit Data output for Indicator and Key scanning.
50	7 G	O	
51	6 G	O	
52	5 G	O	
53	4 G	O	
54	2 G	O	
55	1 G	O	
56	S 16	O	Segment output for Indicator.
57	S 15	O	
58	S 14	O	
59	S 13	O	
60	G 3	-	Not used.
61	G 2	-	
62	G 1	-	
63	G D	-	
64	VDD	-	+B (+5 V)